POLICY RESEARCH WORKING PAPER 2046

Restructuring of Insider-Dominated Firms

Simeon Djankov

In two former Soviet republics, restructuring was faster in privatized companies that were bought by their managers than it was in companies in which managers received significant ownership stakes for free. Managers' incentives to restructure decrease when they regard their newly acquired ownership as a windfall gain.

The World Bank
Financial Sector Practice Department
Financial Economics Unit
January 1999

Summary findings

Using enterprise survey data for 1995–97, Djankov studies and compares how different modes of privatizing to insiders affect enterprise restructuring in two former Soviet republics, Georgia and Moldova.

Restructuring in companies in which incumbent managers received significant ownership stakes for free was similar to that in companies that were still state-owned.

By contrast, restructuring was faster in companies bought by their managers.

Djankov interprets these results as suggesting that managers' incentives to restructure decrease when they regard their newly acquired ownership as a windfall gain.

This paper — a product of the Financial Economics Unit, Financial Sector Practice Department — is part of a larger effort in the department to study the restructuring process in transition economies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rose Vo, room MC10-627, telephone 202-473-3722, fax 202-522-2031, Internet address hvo1@worldbank.org. The author may be contacted at sdjankov@worldbank.org. January 1999. (16 pages)

Restructuring of Insider-Dominated Firms: A Comparative Analysis

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JEL code: G32, G34; Keywords: Former Soviet Union, insider privatization

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* World Bank. I am grateful to Joseph Archvadze, Keti Bedoidze, Gerald Caprio, Vesti Ciumak, David Ekimeridze, and Angela Garabagiu for help in conducting the surveys; and to Paul Hare, Vladimir Kreacic, John Nellis, Randi Ryterman, and two anonymous referees for suggestions. The views expressed are personal and should not be attributed to the World Bank. Correspondence: sdjankov@worldbank.org; tel: 202-473-4748.

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1. Introduction

A large number of recent studies suggest that privatization and the ensuing change in corporate governance are essential conditions for enterprise restructuring in transition economies. State enterprises are generally found to be less efficient, have excess labor and higher wages, and tend to accumulate losses (Frydman et al, 1997, Pohl et al, 1997). Relatedly, privatization has been found to lead to significant improvements in firm performance (Megginson et al., 1994; Hare and Peev, 1995).

There is less agreement on whether particular methods of privatization and modalities within these methods yield more restructuring. A detailed survey of case study evidence (Carlin et al, 1995) shows, for a sample of Czech, Hungarian, Russian, and Bulgarian enterprises, that firms owned by foreign investors perform best, but there is little difference between local insider (manager and employees) and outsider dominated firms. Frydman et al. (1997), using a large data set of Czech, Hungarian, and Polish enterprises, find that private firms outperform state-owned firms, but that outsider-dominated firms do not outperform insider-dominated firms. Smith et al. (1997) find that foreign dominated enterprises in Slovenia have the highest growth in value-added, while insider-controlled firms have a higher average growth when compared to firms controlled by outside local investors. Earle and Estrin (1997) and Linz and Krueger (1998) find no evidence of a robust relation between methods of privatization and enterprise restructuring in Russia, using several alternative specifications. Similar conclusions are reached in Estrin and Rosevear (1998) for Ukrainian enterprises.

In this paper we extend the literature by investigating the effect of different modalities of privatization to insiders on the restructuring process in two former Soviet republics–Georgia and Moldova--using enterprise survey data for 1995-97. Enterprise restructuring was similar in companies where incumbent managers received significant ownership stakes for free and in still state-owned companies. In contrast, the restructuring process was faster in companies bought by

their managers. We interpret these results to suggest that managers' incentives to restructure decrease when they perceive their newly-acquired ownership as a windfall gain.

We choose to study the restructuring process in these two transition economies since they both had privatization programs which favored incumbent managers, making it easier to construct controlled samples of firms. Georgia introduced voucher privatization with concessions to managers as the primary privatization method, and only a handful of firms were sold for cash to their managers or outside investors. In contrast, the majority of Moldovan enterprises was acquired by private investment funds in Czech-style auctions, while a large second group of enterprises were privatized through cash sales to managers (see EBRD, 1997, Table 5.7). Our surveys make it possible to distinguish between the two privatization methods in each country. Thus the data can be used to investigate not only the effects of privatization, but also the effects of the modalities of a particular type of privatization – privatization with concessions to insiders – on subsequent enterprise performance.

An additional reason for focusing on Georgia and Moldova was the comparability of the survey methodology, as both surveys were conducted by the author as inputs in World Bank private sector reviews. Finally, the two countries have much in common in terms of their external (to the firm) environment. The early part of the transition period was marked by either civil war (Georgia) or ethnic tensions (Moldova) which stopped the production process in many enterprises, and resulted in the cessation of large industrial regions (Abhasia in Georgia; Transnistria in Moldova) and the related loss of supplier and customer networks. Both countries also cut off economic relations with Russia during part of the transition period. These negative shocks made the restructuring process all the more difficult and necessary.

The paper is organized as follows. Section 2 suggests some indicators of enterprise restructuring and discusses the relevant literature on its determinants in transition economies. Section 3 describes the survey methodology and the data sample. Section 4 details the regression analysis and provides interpretation of the main findings. Section 5 concludes.

2. Enterprise Restructuring and Its Determinants

The empirical literature on enterprise behavior during transition utilizes a wide array of restructuring measures, based either on accounting or qualitative information. There is no prevalent methodology, as the concept of restructuring differs across studies. For the purposes of this paper, we define restructuring as changes in operations, interactions, and motivation towards success in a changing market environment. This definition captures the essence of restructuring changes, some which will be forced by the behavior of other market players, while others will be pursued by management and owners. Restructuring in this context can lead to two different outcomes. Viable firms would increase their productivity and market share, attract more resources, and upgrade their production process. At the opposite, non-viable firms would shrink to a viable core or close down altogether. Their assets (both human and capital) could be used for alternative production. Thus the decline in business activity of an enterprise need not be associated with a lack of restructuring. It is part of the general movement of resources to more productive uses.

Following on this definition, we use three complementary measures of restructuring: increases in labor productivity (sales per worker growth), assets sales, and renovations at the factory to improve working conditions. The first measure is based on accounting data and is most often used in previous empirical work (Frydman et al, 1997; Pohl et al., 1997; Estrin and Rosevear, 1998) as it depends on both "defensive" or "passive" restructuring (reduction in excess employment), and on "active" restructuring (increase in sales volume).[1] The measure may, however, be misleading since substantial improvements in labor productivity need not arise from "pro-active" restructuring, particularly when it is accompanied by a substantial drop in output. Instead, labor productivity growth may simply account for a low initial level of efficiency, i.e., for the elimination of waste.

[1] A better measure, and one which is used in studies of developed countries, is the change in total factor productivity. This measure depends, however, on the proper accounting of fixed assets and its use is problematic in economies like Georgia and Moldova which have experienced high inflationary periods.

We hence use two other measures of active restructuring (asset sales and minor renovations). Both measures (along with positive real investment, changes in management, suppliers, customers, etc.) can be argued to be highly correlated with restructuring. As discrete variables, however, they diminish the information on restructuring across firms and are cruder than accounting measures. For example, what do different types of minor renovations reveal about the willingness for restructuring? Does it matter how much revenue the enterprise received from asset sales? Were asset sales just another form of asset stripping? These questions are difficult as managers (understandably) are not forthcoming with their answers.

In a previous version of the paper, we also used the share of barter and the change in suppliers as indicators of restructuring. The argument made was that barter was associated with significant costs to enterprises and a high share of barter implied efficiency losses (Hendley et al., 1997). Linz and Krueger (1998), however, use barter as an indicator of the ability of managers to maneuver, manipulate, and survive, by maintaining their enterprise in operations. In the absence of a consensus on the appropriateness of this measure, we drop it from the analysis. The data on supplier changes could not distinguish between changes made purposefully by managers, and changes forced by external circumstances. For example, many supplier-customer relations were cut off during the early transition period, as stated in the previous section. We hence exclude this measure from the current analysis.

The relation between enterprise restructuring and insider privatization in transition economies has been the focus of recent theoretical models (Bolton and Von Thadden, 1995; Blanchard and Aghion, 1996). These papers argue that privatization to insiders may be beneficial to restructuring since it aligns control and property rights. Also, if incumbent managers (now owners) cannot adequately deal with restructuring, they have the right incentives to sell (part of) the firm to outsiders who can, or to hire other managers. Depending on the details of the insider privatization, there may however be a wedge between the value of the firm to insiders and the value of the firm to outsiders. That may prevent desirable restructuring from taking place.

There is, however, no theoretical or empirical literature that distinguishes between the modalities of privatization to insiders, and their effect on enterprise restructuring. In principle, two modalities exist: a sale to incumbent managers (for the purposes of this paper we do not consider employee ownership) or a voucher scheme with concessions to managers that leaves the firms in their control, without any cash sale. A third modality (discussed in Boycko, Shleifer, and Vishny, 1995) is voucher privatization that leaves ownership in the hands of private investment funds, where the *de facto* control stays in the hands of managers as investment funds are either unable or incapable of monitoring. The Modlovan voucher-privatization program is a case in point – although investment funds were formed and acquired significant ownership stakes as early as 1994, they could not exercise control until 1997due to lack of legal rules on monitoring of privatized firms by their Board of Directors. Managers of such enterprises were thus able to retain control in the absence of property rights enforcement. The main focus of this paper is to investigate the relation between enterprise restructuring and privatization to insiders. We distinguish two types of insider privatization: voucher programs where managers receive large ownership stakes for free (Georgia) or which result in *de facto* control by managers (Moldova); and management buy-outs. The working hypothesis is that both types of privatization result in similar restructuring efforts, as managers maximize profits to their own benefit.

In addition to privatization, the literature on the microeconomics of transition identifies two other key determinants of enterprise restructuring. One stylized fact suggests that the imposition of hard budget constraints - elimination of easy access to bank lending - is necessary to ensure adjustments in management behavior. Without hard budget constraints, it may be rational for managers to spend more time lobbying the government for further support rather than undertake painful restructuring measures. The empirical evidence suggests that "enterprises subjected to financial discipline show more aggressive collection of receivables, a closer link between profitability and investment, and a reorientation of goals from output targets to profits" (World Bank, 1996, p.45).

A second stylized fact suggests that competition in the final product market enhances corporate restructuring (Nickell, 1996). Djankov and Hoekman (1998) use a large panel of Bul-

garian manufacturing firms to show that import competition has some positive effect on productivity growth, but it was more than offset by the effects of (successful) lobbying for credits by the affected firms. Market structure is found to have a significant effect on productivity changes - the study shows increased productivity for firms in sectors which experienced a large number of entries either through spin-offs from existing companies or through start-ups. A recent study of Russian manufacturing firms in the period 1992-94 (Earle and Estrin, 1997) found a positive correlation between import competition and several enterprise adjustment indicators (labor productivity, total layoffs, new product lines). At a more aggregate level, a study of Polish industries in 1991-93 (Falk et al, 1996) finds that total factor productivity growth was positively associated with import penetration ratios and negatively associated with sectoral concentration.

We use these stylized facts to construct control variables in the regression analysis. In particular, we use firm-specific information on access to financing and competitive pressures to purge the effect of the external environment on firm restructuring. This will likely alleviate the bias in our estimates of the effect of privatization and different privatization methods on restructuring.

3. The Surveys

To study the relation between modalities of privatization to insiders and enterprise restructuring, a stratified random survey of 92 manufacturing firms in Georgia and 149 manufacturing firms in Moldova was conducted in the autumn of 1997. Most enterprises included in the study went through some type of privatization, even though in some cases the state still has partial ownership. The questionnaire was designed by the author, following a pilot phase during which a dozen enterprises were visited in each country. During these visits, detailed interviews with the general directors, financial directors, and marketing and sales directors of the companies were conducted to document the process of restructuring. The pilot survey also revealed that managers were sensitive to the confidentiality of the data. All questionnaires hence featured an introductory section explaining that the results of the survey would only be used in an aggregated form in cross-country studies on the development of the private sector in the former Soviet Union. Managers were also presented with copies of an earlier study by the author (Pohl et al,

1997) which used similar surveys to analyze the effects of privatization in Central and Eastern European transition economies. The questionnaire was offered to general managers in Georgian (Modlovan respectively) and Russian, as a number of directors in both countries were still ethnic Russians and did not use the local language.

The survey in Georgia covered only enterprises located in Tbilisi (the capital city). This was because the Georgian Statistical Office (our counterpart in the survey) did not have regional branches and could not conduct the survey without large travel-related expenses. Since 72% of all manufacturing activity in Georgia in 1997 was concentrated in Tbilisi, the representativeness of the sample was not discredited significantly. The selection of enterprises in the main survey was based on the 1996 census of manufacturing firms in Tbilisi which covered 5,543 business entities. We chose only enterprises which reported more than 25 employees in 1991, i.e., we do not cover small enterprises or new private firms that started operations following 1991. This category comprised of 1,326 firms. We then calculated the number of firms in each manufacturing sector as a share of the sub-sample. We next multiplied this share by 100 (the desired sample size for the survey) to come to the target number of firms in each manufacturing sector. This process was designed to ensure a distribution of the enterprises in the survey sample that was representative of the industry mix in Tbilisi.

One hundred questionnaires were hand-delivered to General Directors in September, 1997. The survey team re-visited the enterprises in the first week of November, 1997 and collected the responses. In four cases the General Manager was either on sick leave or a business trip. Four other questionnaires were left unanswered since the enterprises were closed down and we excluded them from the subsequent analysis. The total number of surveys included in the analysis was 92. The survey asked managers to identify the main sector of activity of their enterprise. More than a third of all enterprises were in the food and beverage sector (35), the next largest sectors were apparel (13), and industrial machinery (13). The rest of the sample came from metals (9), chemicals (7), construction materials (6), pharmaceuticals (5), and wood and furniture (4).

The enterprise sample in Moldova was built from the database of all former and still state-owned enterprises complied by the Ministry of Economy (our counterpart) in March 1997. The database comprised about 800 companies located throughout Moldova, including in the Transnistria region. We used the methodology described for the Georgian sample to select a smaller group of enterprises which was representative of the overall distribution of economic activity across manufacturing sectors. Letters with the questionnaire were sent to 320 companies (excluding companies in Transnistria). Those were followed by phone calls and some on-site visits. In total, about half of the companies (149) answered the questionnaire. Most companies were located in Kishinev (113), with some companies from other regional centers: Balti (14), Soroca (12), Drochia (4), Nisporeni (4), and Dobrugea (2). As in the Georgian sample, the largest number of companies (38) came from the food and beverage sector, followed by textiles and apparel (25), and machinery (24). The rest of the sample consisted of companies in the construction materials (18), metals (15), chemicals (12), pharmaceuticals (9), and wood and furniture (8) sectors.

The data from the collected surveys were then entered in spreadsheets by our counterpart agencies and sent to the World Bank for further analysis. In both sample, a number of managers had given implausible (for example, profit rate of 120% of sales) or incomplete answers. Given the already small size of the samples, we chose to carry on further phone interviews with those managers and attempt to clarify their reports rather than exclude the companies from the surveys. This approach may have introduced some bias in the survey, to the extent that the data on those firms were subject to more scrutiny and corrections. Since there were no other reliable sources of industrial data in either Georgia or Moldova to make comparisons possible at the time of our surveys, we could not conjecture which way the bias would have gone.

We first study the ownership structure of the sampled firms. We distinguish between two groups of privatized firms, since the primary focus is on the differences between firms bought by managers, and firms which were either given to managers for free or were *de facto* controlled by managers since ownership was not exercised (Table 1). Only a tenth of the firms in the Georgian sample can be classified as management buy-outs (MBOs), while about a quarter of the firms in

the Moldovan sample are MBOs. Note, however, that the ownership structure in each country is not significantly different between MBOs and voucher-privatized firms. This is especially true in Georgia, where the enterprises belonging to the former group actually have lesser share (54.3% as compared to 59.7%) of management ownership. There is a larger difference in management ownership of privatized firms in the Moldova sample (37.8% vs. 17.6%). If one were to sum up the ownership stakes by managers and employees, as suggested in Blanchard and Aghion (1996), the ownership structure of the two groups of privatized firms in Moldova becomes very similar.

Table 1: Ownership Structure of the Sample Firms

The shares are unweighted averages. State ownership includes property under local and municipal administrations. Outside Local Investors include investment funds.

Country	Number of Firms	Managers	Employees	The State	Outside Local Investors	Outside Foreign Investors	Individuals
Georgia							
State	8	0.0	0.0	100.0	0.0	0.0	0.0
MBOs	9	54.3	2.6	8.6	25.6	0.4	8.5
Vouchers	75	59.7	9.1	12.8	16.9	0.6	0.9
Moldova							
State	12	0.0	0.0	100.0	0.0	0.0	0.0
MBOs	33	37.8	5.2	19.4	20.7	4.3	12.6
Vouchers	104	17.6	21.6	16.9	34.8	1.9	7.2

Source: Own calculations.

The lack of substantial variations in the stakes held by insiders in MBOs and voucher-privatized companies is helpful in the empirical analysis, as it can be used to argue that the differences in the degree of restructuring between the two groups of firms (were we to find such differences) are primarily due to the method of privatization and not to the concentration of control that resulted from the privatization process. There has been significant evidence in both transition and market economies that shows that the level of ownership concentration may in itself be an important determinant of the speed of productivity growth.

We next compare the unweighted averages of the three restructuring indicators suggested in Section 2 across the types of company ownership in each country (Table 2). We choose to consider unweighted averages since this method removes the bias that may arise from comparing enterprises with different sizes (either measured by the value of total assets or employment).

One immediate pattern discernible in these simple statistics is the superior restructuring effort in firms privatized through MBOs. In both samples, companies bought by their managers outperform state-owned and voucher-privatized firms on all three restructuring indicators. In particular, MBO firms in Georgia have higher sales per worker growth (22.3%) than state (19.1%) or voucher-privatized (18.9%) firms; have a higher percentage of sales of assets (44.2% vs. 15.3% and 16.6% for state-owned and voucher firms respectively); and have twice as many instances of minor renovations taking place (44.2% vs. 18.9% and 20.3%). The differences in the latter two indicators are statistically significant (using F-tests) at the 5% level. MBO firms in Moldova show on average twice as rapid restructuring on all indicators, and those differences are always statistically significant.

Table 2: Measures of Restructuring
(unweighted averages)

Country	Sales per Worker Growth, p.a. 1995-97	Sale of Assets (% of enterprises)	Minor Renovations (% of enterprises)
Georgia			
State	19.1	15.3	18.9
MBOs	22.3	44.2	44.2
Vouchers	18.9	16.6	20.3
Moldova			
State	8.2	16.2	27.1
MBOs	13.8	36.5	51.7
Vouchers	8.6	18.8	26.0

Source: Own calculations.

While indicative, the results in Table 2 are still incomplete as they fail to take into account some other factors that may influence the speed of restructuring. For example, firms privatized through MBOs may be operating in industries that have higher growth opportunities; such firms may also have access to better financing, or may start from an advantageous initial level of productivity. While the latter one is possible, it does not necessary have to affect the three performance indicators we study. For example, while it may be conceivable that firms which start from better productivity levels could also show faster productivity improvements, it is more difficult to argue that better firms would need to sell more assets or renovate. In other words, while firms bought out by their managers may be the better firms initially there is no rea-

son why they should undergo more changes unless the drive for restructuring is more pronounced.

There are, however, two other possibilities to explain their superior performance. First, they may be in industries where competition is less fierce, either because of barriers to entry or because of previous monopoly positions. Managers are likely to buy such firms as they see their profit potential. Secondly, MBO firms may have credit channels that are unavailable to other types of firms. This may be the case as they are the only firms which have stable ownership and their owners may take on additional credit. What may explain the results in Table 2 is not a superior restructuring effort but better financing.

To ensure unbiased estimates for the main variable of interest (the type of insider privatization), we include controls for both access to financing and competition in the final product market. They are based on survey questions and are discrete in nature. The proxy for access to financing is 1 if the manager answered positively to the question "Have you received any external financing in the last year?", 0 otherwise. The proxy for market power is 1 if the general manager answered positively to the question "Are you a dominant player in the market for your main product among a number with other smaller players?," 0 otherwise. Both proxies can be criticized as being subjective and poorly defined. We include them in the analysis as they only serve to reduce the omitted-variable bias, and we do not offer interpretations of their coefficient estimates.

4. Empirical Evidence

In this section we use simple regression analysis to study the relation between enterprise restructuring and modalities of insider privatization. We look at all three measures of enterprise restructuring detailed in Table 2. Dummies are used for management buy-outs and voucher-privatized firms, with state-owned firms being the numeraire. Georgia is used as the numeraire country. The results show an interesting pattern: privatization through management buy-outs is positively associated with enterprise restructuring, while voucher privatized firms do not restructure more rapidly than still state-owned firms (Table 3). This result carries through for all

three restructuring indicators, and is particularly strong for asset sales and minor renovations, where the magnitudes of the coefficient estimates (0.182 and 0.211 respectively) suggest that management-bought firms restructure twice as fast as state-owned or voucher-privatized firms.

How can one explain the positive association between enterprise restructuring and management buy-outs, on the one hand, and the lack of association between enterprise restructuring and voucher privatization, on the other? One interpretation may come from the literature on windfall income through bequests, lottery winnings, or sudden increases in social security benefits in the United States (see Wilcox, 1989 for a summary). These studies find that windfall income is consumed faster than earned income, as its recipients include only a small fraction of the windfall in the financial planning of their future. In the privatization context, this would imply that managers who gain ownership for free (either through vouchers or indirectly when the voucher scheme results in lack of monitoring) may have less incentives to restructure, as their income is not solely based on the success of the enterprise. In contrast, managers who bought their enterprises perform better as their fortunes are connected entirely to the profits that the enterprise generates.

An alternative explanation is that enterprises bought out by their managers were better enterprises to start with. That is to say, MBOs are the result of "cherry-picking" during the privatization process. This argument has been put forward in Frydman et al. (1997) for a sample of Central European firms. It fails to explain, however, why such firms would need to sell assets or renovate, as is the case with the enterprises in our study. The "cherry-picking" hypothesis would have to be augmented by arguing that those were better enterprises which also had smarter, more motivated managers. It is then not obvious why such managers did not acquire their enterprises the smarter way - through voucher privatizations. Without further analysis, the answers are not comprehensive.

Table 3: OLS Estimation Results
(Coefficient, t-Statistics)

Explanatory Variable	Productivity	Asset Sales	Renovations
Number of Observations	241	241	241
Management Buy-Outs	0.036*	0.182*	0.211*
	(2.335)	(5.627)	(4.277)
Voucher Privatization	0.009	0.079	-0.042
	(0.612)	(1.224)	(-0.358)
Access to Financing	0.035*	-0.096*	0.124*
	(3.421)	(-2.518)	(3.663)
Market Power	0.016*	0.062	0.102
	(2.514)	(1.549)	(1.821)
Food and Beverage	0.024*	0.142*	0.081*
	(2.574)	(6.285)	(2.562)
Textiles and Apparel	-0.045*	0.031	-0.062
	(-2.226)	(1.451)	(-1.074)
Wood and Furniture	-0.011	-0.082	0.088
	(-1.368)	(-1.204)	(1.622)
Construction Materials	0.051*	0.012	-0.037
	(3.424)	(0.688)	(1.627)
Chemicals	-0.022	-0.122	-0.012
	(-1.877)	(-1.079)	(-1.405)
Pharmaceuticals	-0.041	-0.098	0.049*
	(-1.687)	(-0.496)	(3.258)
Metals	-0.101*	-0.117*	-0.128*
	(-3.882)	(-12.986)	(2.056)
Moldova Country Dummy	-0.062*	0.021	0.054*
	(-4.82)	(1.124)	(2.641)
Adjusted R^2	0.245	0.152	0.207

Notes: The numeraire sector is Industrial Machinery. Standard errors are heteroskedasticity-consistent. A constant term is included in all regressions.

Access to bank financing proves to be another significant explanatory variable of restructuring. It serves to increase productivity growth and the probability of renovations, but is negatively correlated with asset sales. The latter finding can be interpreted to suggest that asset sales are a substitute for access to bank financing. Having a higher degree of market power is also associated with higher productivity growth but not significantly associated with asset sales or renovations activity. Note, however, that both coefficients are positive, suggesting that restructuring is enhanced if the enterprise has larger control of the market. This may be because such enterprises can finance renovations through internally generated resources, and also because they are in a better position to have assets valuable to other firms.

Some industry dummies are also significant in explaining enterprise restructuring. Firms operating in the Food and Beverage sector are associated with more rapid restructuring. In con-

trast, firms operating in the Metals sector tend to restructure less on all three measures. The patterns for other sectors are less pronounced, and frequently the coefficients change signs. An exception is Chemicals, where the coefficients are always negative, albeit insignificant. The sectoral coefficients suggest a pattern often reported in other firm-level studies on transition – restructuring is less rapid in the heavy industry sectors.

5. Conclusions

Using a stratified random sample of insider-controlled firms in Georgia and Moldova, we uncover an interesting stylized fact: restructuring is more rapid in enterprises bought-out by their managers as compared to enterprises privatized through voucher auctions where the control (direct or indirect) remains with their managers. We suggest that this may be due to the perception on the part of managers that ownership acquired through voucher privatization is a windfall gain. Further research is, however, necessary to help explain these findings and provide a consistent theoretical framework.

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